



Province of the  
**EASTERN CAPE**  
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo  
Provinsie van die Oos Kaap: Departement van Onderwys  
Porafensie Ya Kapa Botjhabela: Lefapha la Thuto

# **NATIONAL SENIOR CERTIFICATE**

**KEREITI YA 12**

**LOETSE 2024**

**DISAENSE TSA TEMO P1  
TATAISO YA HO TSHWAYA**

**MATSHWAO: 150**

Tataiso ena ya ho tshwaya e na le maqephe a 10.

**KAROLO YA A****POTSO YA 1**

1.1	1.1.1	C ✓✓		
	1.1.2	D ✓✓		
	1.1.3	C ✓✓		
	1.1.4	A ✓✓		
	1.1.5	D ✓✓		
	1.1.6	B ✓✓		
	1.1.7	D ✓✓		
	1.1.8	A ✓✓		
	1.1.9	C ✓✓		
	1.1.10	A ✓✓	(10 x 2)	(20)
1.2	1.2.1	A feela ✓✓		
	1.2.2	Ha eyo ✓✓		
	1.2.3	Both A le B ✓✓		
	1.2.4	B feela ✓✓		
	1.2.5	A feela ✓✓	(5 x 2)	(10)
1.3	1.3.1	Solubiliti ✓✓		
	1.3.2	Metaboliki ✓✓		
	1.3.3	Amniotic fluid ✓✓		
	1.3.4	Porolapose ✓✓		
	1.3.5	Kgatsela ✓✓	(5 x 2)	(10)
1.4	1.4.1	Biological value ✓		
	1.4.2	Blowfly ✓		
	1.4.3	Cryptorchidism ✓		
	1.4.4	Dizygotic twins ✓		
	1.4.5	Lactation ✓	(5 x 1)	(5)

**MATSHWAO A KAROLO YA A: 45**

**KAROLO YA B****POTSO YA 2: PHEPO YA DIPHOFOLO**

- 2.1 2.1.1 **Classifikheishene ya phoofolo**  
Non-ruminant ✓ (1)
- 2.1.2 **Ditlhaku tsa ditho se tayakeramong**
- (a) C ✓ (1)  
(b) F ✓ (1)  
(c) B ✓ (1)  
(d) D ✓ (1)
- 2.2 2.2.1 **Tlhwao ya dikhomponente tsa dijo tse oraginic tse hlophisitsweng.**  
Diminerale ✓ (1)
- 2.2.2 **Tlhwao ya difidi khomponente tse relevant.**
- (a) carbohydrates ✓ (1)  
(b) Protein ✓ (1)
- 2.2.3 **Porosese ya absoposhene e sebedisang di carrier molecules**  
Active absorption ✓ (1)
- 2.2.4 **divithamene/ dielemente tsa di minerale**
- A Vithamene ya K ✓ (1)  
B Pica ✓ (1)  
C Iron ✓/ copper/vitamin B12 (1)
- 2.3 2.3.1 **Khaletjhuleishene ya digestibility co-efficient**
- Dry matter excreted = 50% of 6 kg  

$$= \frac{50}{100} \times 6 \text{ kg}$$

$$= 3 \text{ kg} \checkmark$$

Coefficient of digestibility =  

$$\frac{\text{Dry matter intake} - \text{Dry matter excreted}}{\text{Dry matter intake}} \times 100 \checkmark$$

$$= \frac{15 \text{ kg} - 3 \text{ kg}}{15 \text{ kg}} \times 100 \checkmark$$

$$= 80 \checkmark \% \checkmark$$
 (5)

2.3.2 **Inthaporeteishene ya khaletjhuleishene**

  - Fidi e daejesetebale ka haholo/ 80% ✓
  - Fidi e na le dikhonsentrietsi ✓
  - Fidi e nale faeba e tlase. ✓ (Any 1 x 1) (1)

**2.3.3 Difeketha tse PEDI tse ka amang daejesetebilithi ya hay.**

- Preparation of the hay ✓
- Stage at which the plant was cut for making hay ✓
- Crop from which the hay was produced ✓
- Supplementation with non-protein nitrogen ✓
- Supplementation with molasses and protein ✓ (Any 2 x 1) (2)

**2.4 2.4.1 Eneji ya B**

Metaboliki eneji ✓ (1)

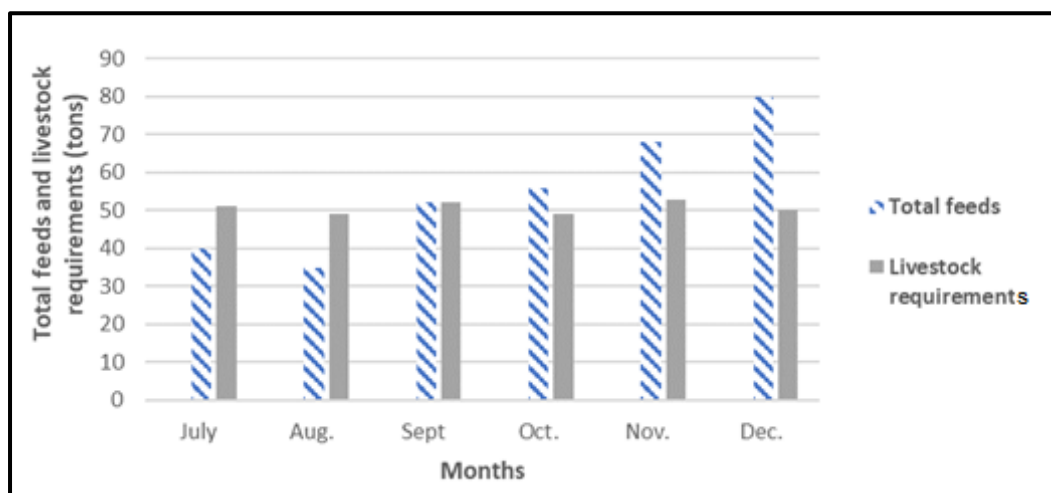
**2.4.2 Khalekhuleishene ya net eneji eo nku e ka e fumanang ho tswa ho reishene ya ka mehla le mehla.**

Net energy = gross energy – (faeces + urine and gases + heat) ✓  
= 15 – (5 + 1,3 + 0,9) ✓  
= 15 – 7,2  
= 7,8 MJ/kg DM ✓ (3)

**2.4.3 Inthaporetheishene ya dikhaletjhuleishene POTSONG ya 2.4.2.**

- Out of the potential energy value of 15,648 MJ/kg DM, only 8,034 MJ/kg DM of that energy is available to the animal after all the losses occurred. ✓
- Almost 52% of the potential energy was lost. ✓
- Only 48 % of the potential energy value is available for use by the animal. ✓ (Any 1 x 1) (1)

## 2.5 2.5.1 Papiso dipakeng tsa total feeds available le livestock requirement



### Keraethiriya ho koreka

- Taetlele e nepahetseng ✓
- Khalibareishene le leibeleng e nepahetseng y-axis (Total feeds and livestock requirements) ✓
- Khalibareishene le leibeleng e nepahetseng x-axis (dikgwedi) ✓
- Di unitsi (tons) ✓
- Mofuta o nepahetseng wa kerafo ✓
- Accuracy (e hlophisitsoeng hantle) ✓

(6)

### 2.5.2 Surplus kgweding ya Tshitwe ka di kg

$$\begin{aligned} \text{Surplus} &= 30\text{t} \times 1\,000 \checkmark \\ &= 30\,000 \text{ kg} \checkmark \end{aligned}$$

(2)

### 2.5.3 Mejara tse Cost-effective tseo rapolasi a ka di disebedisang ho sebitsana le surplus kgweding ya Tshitwe.

- Ensiling ✓
- Ho etsa hay / Bailing / Storage ✓

(Any 1 x 2) (2)

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**POTSO YA 3: TLHAHISO YA DIPHOOFOLO, TSHIRELETSO LE TAOLO.**

- 3.1 3.1.1 **Farming system e bontshotsweng SETSHWANTSHONG SA B**  
Subsistence farming ✓ (1)
- 3.1.2 **Sepheo sa farming system e ka hodimo**  
E phrojusa di dhrodakts tse lekaneng ho fepa le lapa fela, kante le ho rekisa ✓ (1)
- 3.1.3 **Hypothesis ya phrodakthivithi ya farming system in SETSHWANTSHONG SA A**  
E hodimo ✓ (1)
- 3.1.4 **Tlhaloso hore ekaba difeketha tse ka tlase di sebedisitswe ha jwang ho nyolla phrodakshene ho extensive farming system.**
- (a) **Reproduction**
- Ho kgetha diphoofolo tse nand le di characteristics tse betere bakeng sa meithing/ selection ✓
  - Meithing ya diphoofolo tse tona le tse tshehaadi tsa di breed tse sa tshwaneng/ crossbreeds ✓
- (Any 1x 1) (1)
- (b) **Nutrition**
- Ho eketsa di supplementary fiding mekgahlelong e fapaneng haeba ho ho fula ho sa anela ✓
  - Creep / flush feeding
  - Phepo e nepahetseng/ diet e nepahetseng ✓
- (Any 1 x 1)
- 3.2 **Facility e kgothalleditsweng bakeng sa diphoofolo.**
- 3.2.1 Infra-red lights/heater/air conditioner ✓ (Any 1 x 1) (1)
- 3.2.2 Insulation ✓ (1)
- 3.2.3 Feeders ✓ (1)
- 3.3 3.3.1 **Tlhaloso ya homoeothermic**  
Bokgoni ba phoofolo ho boloka ✓ dithemperitjhara tse sa fetoheng. ✓ (2)
- 3.3.2 **Tsela e le NNGWE eo rapolasi a ka e sebedisang ho tshireletsa diphoofolo dithempheritjhareng tse hodimo haholo ho extensive production system**
- Lema difate ✓
  - Fana ka metsi ✓
  - Rua diphoofolo tse kgonang ho emelana le dithempheritjhara tse hodimo haholo. ✓
- (Any 1 x 1) (1)
- 3.3.3 **Kamano pakeng tsa feed intake, water intake le phrodakseken ya diphoofolo tlasa dithemperitjhara tse phahameng haholo.**  
Ha dithemperitjhara di le hodimo haholo diphoofolo di nwa metsi haholo, ✓ dija dijo ha nyane/ difula ha nyane ✓ mme e porojuse ha nyane/ phrodakshene e theohe. ✓ (3)

- 3.4 3.4.1 **Facility e setshwantshong**  
Holding pen ✓ (1)
- 3.4.2 **Design fithara tse PEDI tseo rapolasi a hlokang ho di ela hloko ha a rala facility**  
 • Solid sides ✓  
 • No sharp edges ✓  
 • Sides should be high and strong enough to handle specific animal ✓ (Any 2 x 1) (2)
- 3.4.3 **Tshebediso e le NNGWE ya facility ONE**  
Holding pen e sebediswa ho boloka diphoofolo pele di ka etsuwa eng kapa eng ✓ (1)
- 3.5 3.5.1 **Lefu e ammegn letswele setshwantshong**  
Mastitis ✓ (1)
- 3.5.2 **Tlhphiso ya lefu le POTSONG 3.5.1 oitshetlehile ho kokwanahloko e le bakang.**  
Bacterial disease ✓ (1)
- 3.5.3 **Matshwao a MABEDI ao phoofolo a bontshwang ke phoofolo e nang le lefu TWO**  
 • Thick flaky milk which may contain clots ✓  
 • Discoloured serum and sometimes be blood-stained or watery ✓  
 • Decline in milk production ✓  
 • Cow or ewe reluctant for calf or lamb to nurse. ✓  
 • Infected quarter of the udder is hot, swollen and painful and the other side is hard ✓  
 • Rapid pulse rate ✓  
 • Limping with one hind leg far from the udder ✓ (Any 2 x 1) (2)
- 3.5.4 **Dieconomic implications tsa lefu lena ho rapolasi**  
 • Ho theoha hwa phrodikshene ya lebese ✓  
 • Loss of livestock/ ho shwa ha diphoofolo ✓  
 • Ditheko tsa pheko tse hodimo ✓  
 • Tlhoko ya tjhelete / profit ✓ (Any 2 x 1) (2)
- 3.6 3.6.1 **Tlhophiso ya pharasaete e DITSHWANTSHONG A LE B**  
A – External/ ecto- parasite ✓  
C – Internal/ endo- parasite ✓ (2)
- 3.6.2 **Lefu le bakwang ke microscopic parasite SETSHWANTSHONG A**  
Mange ✓  
Scab ✓ (Any 1 x 1) (1)

3.6.3 **Matshwao a MABEDI a phoofolo a infested POTSONG 3.6.2in QUESTION 3.6.2**

- Skin irritation with severe itching that causes rubbing, scratching, and hair loss. ✓
- Dermatitis ✓
- Round hairless lesions ✓ (Any 2 x 1) (2)

3.6.4 **Dicontrol measures tse PEDI tsa pharasaete SETSHWANTSHONG SA B**

- Rotational grazing/ Keep animals away from an area for a specific period. ✓
- Avoid wet areas/ areas around drinking spots should be kept dry. ✓
- Camping off areas on the farm. ✓
- Breed animals that are genetically more resistant to this internal parasite. ✓ (Any 2 x 1) (2)

3.7 3.7.1 **Matshwao a ma BEDI a tlwaelehleng a salt poisoning ho tloha , seratswaneng , tse ka hlocomelehang diphoofo long.**

- Excessive salivation ✓
- Ho pipitlelwa ✓
- Ho nyorwa kgafetsa ✓ (Any 2 x 1) (2)

3.7.2 **Preventative measure ya salt poisoning**

- Supplying animals with enough salts ✓
- Supplying animals with enough water ✓
- If animals are deprived salt for an extended period, they should not be allowed free access to an abandon supply of salt. ✓
- Lick should be close to water supply ✓ (Any 1 x 1) (1)

3.7.3 **Karolo e le NNGWE ya mmuso diphoofo long ho tshireletsong ya diphoofo lo**

- Training of agricultural specialists at colleges and universities. ✓
- Generation and implementation of legislation to address priorities in the livestock industry. ✓
- Veterinary research/ Advice, monitoring and control of animal diseases. ✓
- Veterinary services/ Control of production, distribution and use of agricultural medication according to appropriate legislation. ✓
- Import and export bans. ✓
- Control of the spread of diseases by meat inspectors that identify diseases in animal products, whether contagious or not. ✓
- The production of some specialised livestock remedies. ✓
- Quarantine services/ Control in the movement of farm animals, locally and abroad, to prevent diseases from spreading through quarantine services. ✓
- Research to address and promote priorities identified by the livestock industry. ✓ (Any 1 x 1) (1)

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**POTSO YA 4: REPHRODAKESHENE YA DIPHOOFOLO**

- 4.1 4.1.1 **Phooflo ya polasing e nang le reproductive system**  
Cow ✓ (1)
- 4.1.2 **Karolo tse leibotsweng B and E**  
B – Vagina ✓  
E – Oviduct/ fallopian tube ✓ (2)
- 4.1.3 **TLHAKU e tsamaelenang le e tsamaelenang le karolo moo tse latelang di etsahalang:**
- (a) F ✓ (1)
- (b) C ✓ (1)
- 4.2 4.2.1 **Nako saekeleng e characterised ka ho etsuwa hwa corpus luteum**  
Met-oestrus/ Meta-oestrus ✓ (1)
- 4.2.2 **Hormone e etsang ovulation saekeleng ena**  
Luteinising hormone/ LH ✓ (1)
- 4.2.3 **Tlhaloso ya oestrus**
- Oestrus is the time during the reproductive cycle when the female shows interest ✓ in mating and will stand to be mounted by both sexes and mated by the bulls. ✓
  - Oestrus is the period in the oestrus cycle when the non-pregnant cow ✓ is most receptive to a male. ✓
  - Oestrus is when the female is receptive to the male ✓ and will stand for mating. ✓ (Any 1 x 2) (2)
- 4.2.4 **Methote tse PEDI tsa ho hlwaya dikgomo tse ho ho heat**
- Chin-ball markers ✓
  - Tail chalking ✓
  - Pedometer ✓
  - Heat mount detector ✓ (Any 2 x 1) (2)
- 4.3 4.3.1 **Mekgahlelo ya meithing e bontshitsweng ke poho setshwantshong**  
Courtship ✓ (1)
- 4.3.2 **Difactor tse hlahisang meithing behaviour di pohong**
- Genetics ✓
  - Environmental factors ✓
  - Physiological factors ✓
  - Health ✓
  - Previous experience ✓ (Any 2 x 1) (2)
- 4.4 4.4.1 **Sesebediswa setshwantshong sa A**  
Electro-ejaculation probe ✓ (1)

- 4.4.2 **Tshebediso ya sesebediswa se boletsweng POTSONG 4.4.1**  
Stimulate ejaculation ✓ (1)
- 4.4.3 **Thempheritjhara e loketseng simene e bokelletsweng**  
-196 °C ✓ (1)
- 4.4.4 **Mesebetsi ya semen dilutants**  
(a) Provides protection against changes in pH ✓ (1)  
(b) Provides nutrients for the sperm cells ✓ (1)  
(c) Prevents bacterial growth ✓ (1)
- 4.4.5 **Tlhaloso ya nako e nepahetseng ya artificial insemination**  
Cows showing signs of oestrus in the morning are inseminated in the afternoon ✓ and cows showing signs of oestrus in the afternoon are inseminated the next morning. ✓ (2)
- 4.5 4.5.1 **Tlhwao ya procedure tayakeramong**  
Cloning/ Nuclear transfer ✓ (1)
- 4.5.2 **Lebitso laphoofolo C ho procedure**  
Surrogate sheep ✓ (1)
- 4.5.3 **Suitability thekeniki ya subsistence farming**  
Not suitable ✓ (1)
- 4.5.4 **Tlhaloso ya dikarabo ho Potso 4.5.3**  
• It is expensive  
• Requires specific skills (Any 1 x 1) (1)
- 4.6 4.6.1 **Phrosese e bontshitsweng setshwantshong**  
Parturition/ calving ✓ (1)
- 4.6.2 **Lebitso la boemo bo ka sitisang phrosese ena**  
Dystocia ✓ (1)
- 4.6.3 **Dicauses tse PEDI tse boletsweng POTSONG 4.6.2**  
• Flexion of the elbow ✓  
• Deviation of the head ✓  
• Retention of one or both forelegs ✓  
• Hydrocephalus ✓  
• Twins ✓  
• Congenital defects/ deformities ✓  
• Posterior presentation ✓ (Any 2 x 1) (2)
- 4.6.4 **Mekgahlelo ya rephrodakeshene dikgomong**  
E ✓  
D ✓  
B ✓  
C ✓  
A ✓ (5)

[35]

MTSHWAO KAOFELA A KAROLO YA B: 105  
MATSHWAO KAOFELA L: 150